

## ABSTRACT

### FUNDAMENTAL AND COMPLEMENTARY SCIENCE

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#### **SPECIFIC PURPOSE LANGUAGE ABILITY PARTICULARIZATION ON BUSINESS ENGLISH**

**Abstract:** *Specific purpose language ability is quite a complex concept which takes into consideration the relationship between language ability in general and specific background knowledge. This constitutes a very important issue as language is learned in communicative contexts and in turn, those contexts should affect the nature of the language acquired. The interaction between language knowledge and specific purpose content knowledge blended with the authenticity of task are the clearest defining features in testing LSP (language for specific purpose). In general purpose language testing, the factor of background knowledge is usually seen as a variable, while in LSP testing the background knowledge is a necessity and an important part of the concept of specific purpose language ability. Business English is part of ESP (English for specific purpose); therefore it also requires specific language ability and a little bit of knowledge in the respective domain. Specific purpose background knowledge related to academic or professional contexts and the ability to perform in a specific purpose language are important parts in LSP testing.*

**Keywords:** *LSP, ESP, language ability, background knowledge.*

#### RALUCA APOSTOL-MATES, ALINA BARBU

"Mircea cel Batran" Naval Academy, Constanta // Constanta Maritime University

#### **TEACHING MARITIME ENGLISH WITH DOODLES**

**Abstract:** *When it comes to acquiring new, specialized vocabulary like the lexis of Maritime English, it is well-nigh impossible to assert that this is a piece of cake. As a general rule, students of Maritime English get easily bored when being taught new words belonging to the maritime environment. Thus, any method which is liable to get them more motivated and appealed to the act of learning useful words is more than appropriate. Consequently, doodling comes in very handy as a learning tool given the fact that anybody makes use of it as a gesture of visual thinking. The present paper aims at presenting some very useful internet-based tools which students of Maritime English may employ in order to bring the verbal classroom to the visual classroom enhancing thereby their chance of becoming proficient in Maritime English.*

**Keywords:** *doodling, mind-mapping, visual thinking, mnemonic techniques, luminal thinking*

#### MIHAELA ADINA APOSTOLACHE

Faculty of Letters and Sciences, Petroleum-Gas University of Ploiesti, Romania

#### **WAYS TO STRENGTHEN THE COMMON EUROPEAN POLICY REGARDING MIGRATION AND ASYLUM**

**Abstract:** *The paper addresses a topical issue that the European Union is facing, namely migration, which has become one of the most controversial phenomena, often associated with illegal activities, organized crime, terrorism or social and cultural tensions.*

*The aggravation of this phenomenon during 2015 has determined the effective management of the migration and asylum domains at Union level to be a primary objective for the current European executive (2014-2019). With May 2015, the European Commission adopted a new European Agenda on Migration, through which the EU proposes immediate action to meet current challenges of migration, and also medium and long-term initiatives to be taken in order to provide structural solutions for a better management of migration in all its aspects.*

*At the moment, the European Union and, therefore, all member states must rapidly find solutions for the refugees who reached the continent. This generates further debate at European level to find the most efficient ways to strengthen the common policy regarding migration and asylum.*

**Keywords:** *migration, European policy, refugee, asylum, international protection*

**ALINA BALAGIU, MARIOARA PATESAN**

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**TYPES OF WRITTEN EVALUATION FOR ESP AND SCORE ANALYSIS (A CASE STUDY)**

**Abstract:** The paper is a case study based on the hypothesis that the students' scores at written evaluations during a semester should be the same, as long as they are based on the same knowledge the students from different groups gathered. The number of English classes is the same and the subject has been taught in the same manner for all the groups. The analysis is done on groups in the first and second year of study.

**Keywords:** evaluation, ESP, methodology

**CORINA CIRCEI, CRISTINA STOICA, MARIUS IULIAN MIHAILESCU, CIPRIAN RACUCIU**

Titu Maiorescu University // LUMINA – The University of South-East Europe

**A NEW MODELING PERSPECTIVE ON VOCAL TRACT**

**Abstract:** The paper will discuss about a new perspective regarding the modeling process of the vocal tract. Our approach is more technological, trying to combine some fundamental characteristics of biometrics in order to create a vocal profile analysis for different corpus of recordings. A comparison between Mel Frequency Cepstral Coefficients (MFCCs) and Long-term Formant Distributions (LTFDs) will be presented with the goal to see as output some similar information. The output will be used in order to create a report with the characterization of the voice, which could be used in a forensic context.

**Keywords:** security, UML, integrity, software analysis.

**VERONICA CORNACIU**

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**$(h, \varphi)_\varepsilon$  – OPTIMALITY CONDITIONS FOR MULTI-OBJECTIVE FRACTIONAL SEMI-INFINITE PROGRAMMING WITH UNIFORM  $K$ - $(F_b, \rho)$  CONVEXITY**

**Abstract:** Base on algebraic operation introduced by Ben Tal [A. Ben Tal, On generalized means and generalized convex functions, J. Optim. Theory Appl. 21 (1977) 1–13] and a new generalized pseudo-operation with one parameter of the following form:  $x \oplus_\varepsilon y = h^{-1}(h(x) + \varepsilon h(y))$ , where  $h$  is an  $n$  vector-valued continuous function, defined on a subset  $H$  of  $R^n$  and possessing an inverse function  $h^{-1}$ ,  $\varepsilon$  is a arbitrary but fixed positive real number, the nonsmooth generalized convex functions called uniform  $K$ - $(F_b, \rho)$ -convex function, uniform  $K$ - $(F_b, \rho)$ -pseudoconvex function, uniform  $K$ - $(F_b, \rho)$ -quasiconvex function are defined in sense of  $(h, \varphi)_\varepsilon$ . The nonsmooth multi-objective fractional semi-infinite programming involving these generalized convex functions is researched, and some sufficient optimality conditions are obtained.

**Key words:** Nonsmooth, multi-objective fractional semi-infinite programming, optimality conditions, uniform  $(h, \varphi)_\varepsilon$ - $K$ - $(F_b, \rho)$ -convex function.

**VASILE DINU, CRISTINA-MIHAELA LAZAR, IONEL BOSTAN, COSTICA ROMAN, PUIU NISTOREANU, ION-STELIAN CHIHAI**

Academy of Economic Studies, Faculty of Commerce, Bucharest // "Ovidius" University Constanta, Faculty of Economics and Business Administration // "Alexandru Ioan Cuza" University Iasi, Centre for European Studies // "Ştefan cel Mare" University, Faculty of Economics and Public Administration, Suceava // Academy of Economic Studies, Faculty of Commerce, Bucharest // "Ştefan cel Mare" University, Faculty of Economics and Public Administration, Suceava

**PROVIDING FINANCIAL SUPPORT FOR THE NATIONAL DEFENSE SYSTEM IN THE CURRENT GEOPOLITICAL CONTEXT**

**Abstract:** This paper highlights the most important aspects, seen mainly from an economic and financial perspective, of the correlation between the needs of the national defense system with the possibilities conferred by the development stage of our country, considering that Romania is a NATO member, with certain commitments in this regard. Obviously, based on the recent Political Agreement on increasing national defense funding, we consider that the support for military expenditure should be much stronger, given the risks of the current regional geopolitical space, generating instability and insecurity. Thus, after a period when the Romanian Army funding parameters were relatively modest, we highlight that the allocations

in question are going to be based on a distribution of approx. 2% of the GDP (period 2017-2027), a vital issue in ensuring the support and development of procurement programs - with equipment and combat technology - and military staff training. The study of the literature has strengthened our belief, expressed herein, that the respective percentage may be increased, depending on the security needs and obligations that Romania can assume, targeting – ultimately – a greater increase in the operational capability of the Army.

**Keywords:** public spending, military logistics/ procurement, remuneration/ pay, missions / operations.

#### CLAUDIU MIHNEA DRUMEA

Faculty of Juridical and Economic Sciences, Spiru Haret University

#### **LABOR RELATIONS OF THE PEASANTS UPON THE CLOSURE OF THE COMMUNITY TYPE ORGANIZATION DURING THE 15<sup>th</sup>-16<sup>th</sup> CENTURIES**

**Abstract:** The right of displacement and release of neighboring states that during the sixteenth century, the peasants maintain their personal liberty.

Although since the late fifteenth century the tax on cereals called the “bucket out”(1) was introduced, which sought to prevent displacement of peasants, in principle they were free, maintaining their right to resettlement until the reign of Michael the Brave.

The fact that, especially in the second half of the sixteenth century, the congregation, which in the fifteenth century was still quite strong, begins to unravel is attested by the increasing category of the poor within, whose rights over the land are increasingly more spoiled; they even leave the community losing any rights over ancestral land. In legal terms, emerged from the community, they are free men and women, but deprived of their land.

So that, practicing craftsmanship and trade, which lead to establishing themselves in the cities, attract significant changes in peasant life of this period.

**Keywords:** commodity relations, enslavement, redemption, working relations

#### EDUARD EUSEBIU EMANDII

“Mircea cel Batran” Naval Academy, Constanta

#### **AUTHENTICATION - THREATS AND COUNTERMEASURES**

**Abstract:** When it comes to cybersecurity, one of the most sensitive issues is the user's credentials. Obtaining a user's password is the easiest way for a hacker to gain control of a system or stealing personal information. Nowadays more and more services tend to be online from stores, courses, bank transactions to ways of socializing. For all of this we need a user account and password to authenticate.

Using a different password for each account can become tedious so we tend to use simple and short passwords in order to retain them, but with increasing number of accounts we arrive at the same result by using the same password namely for all online resources to which we have access. This is the first step of becoming an easy target to get hacked. This paper aims to outline some methods of increasing security when it comes to authentication

**Keywords:** authentication, security, cyber defence, cybersecurity

#### ANA-MARIA ENE

S.A. MAGISTRA

#### **CHEMICAL AND STRUCTURAL CHARACTERIZATION OF $Zn_{2-x}Co_xSiO_4$ (X=0.5) SOLID SOLUTIONS TYPE SYNTHESIZED BY TWO UNCONVENTIONAL METHODS (SOL-GEL METHOD AND PECHINI METHOD)**

**Abstract:**  $Zn_{2-x}Co_xSiO_4$  ( $x=0.5$ ) nano-particles were successfully synthesized at a low temperature of 900°C both by Pechini method and sol-gel method with starting materials of  $Zn(CH_3COO)_2 \cdot 2H_2O$ ,  $Co(CH_3COO)_2 \cdot 4H_2O$  and  $Si(OCH_2CH_3)_4$ . The structural characterization of the precursors and derived synthesized oxide powders is done by X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), thermal analysis (TG-DTG) and electron microscopy (SEM, EDX and TEM) studies. The effect of heat-treating temperature on the crystallinity of the  $Zn_{2-x}Co_xSiO_4$  ( $x=0.5$ ) was investigated. Combined the XRD data and the strong FTIR peaks as signed to Zn-O and Si-O vibration indicate the formation of  $Zn_{2-x}Co_xSiO_4$  ( $x=0.5$ ) phase at a temperature of 900°C. Also the nano-crystals size distribution for sol-gel process was studied and the main diameter of nanoparticles was about 15nm.

**Keywords:** sol-gel · Pechini ·  $Zn_{2-x}Co_xSiO_4$  · nano-crystals

**VIRGIL ENE-VOICULESCU , ION LAZAR**

"Mircea cel Batran" Naval Academy, Constanta

**NATO SPECIFIC EVIDENCE IN HIGHER EDUCATION OF MARINE**

**Abstract:** *These papers contain the main of introduction the NATO contribution in our instructional navy education. In this respect we won't to promote a new sports and physical education curricula for the students, according with NATO standards.*

**Keywords:** *sport and physical education, obstacle swimming, navy education, NATO contribution, instructional programs*

**VIRGIL ENE-VOICULESCU, CARMEN ENE-VOICULESCU , ION LAZAR**

"Mircea cel Batran" Naval Academy, Constanta // "Ovidius" University, Constanta, Romania // "Mircea cel Batran" Naval Academy, Constanta

**THE USE OF AMINO ACIDS BEFORE EFFORT**

**Abstract:** *The present paper is based on the requisite that the administering of amino acids to students participating in the National Contest of Chemistry leads to increased attention before important competitions as such. The paper briefly presents the role of attention and memory in obtaining good results in competitions as a consequence of administering effort sustaining substances.*

**Keywords:** *amino acids, ergo genetic substances*

**ALEXANDRU GEORGESCU, ULPIA-ELENA BOTEZATU, ALINA-DANIELA POPA, ȘTEFAN POPA, ȘTEFAN-CIPRIAN ARSENI**

EURISC Foundation, Bucharest // Romanian Space Agency, Bucharest // Military Equipment and Technologies Research Agency, Bucharest // Military Equipment and Technologies Research Agency, Bucharest // Military Equipment and Technologies Research Agency, Bucharest

**CRITICAL INFRASTRUCTURE DEPENDENCY ON SPACE SYSTEMS**

*The work was supported by a grant of the Romanian National Authority for Scientific Research, CNDS-UEFISCDI, project number 197/2012.*

**Abstract:** *Space systems are enablers of key applications which have become critical for the functioning of the infrastructure system-of-systems, especially from the perspective of risk governance efforts and CI protection. Rapid innovation in space system cost, accessibility and applications has engendered various degrees of dependence on them. The critical dependencies are not evenly distributed throughout geographic areas, industries, infrastructure systems or national territory, even throughout the European Union. As for the critical aspect of dependencies, in which such interrelations lead to new vulnerabilities and the risk of cascading disruptions in complex systems, the greater emphasis on space systems has served to mitigate certain risks while encouraging others. Even in areas where space services remain a fact of tomorrow and criticality has not been achieved, it is the nature of interdependent critical infrastructures to enable propagation of space system disruption risk from areas which are, indeed, heavy users of space systems. Ultimately, the incentives for the use of space services are too great for the potential risks to deter usage, and it falls to responsible stakeholders (governments, providers, consumers, technical authorities and international organizations) to create the legislative and organizational framework and instruments for identifying and addressing the risks generated by the growing dependence on space systems.*

**Keywords:** *critical infrastructures, space systems, dependence, risk governance, complex systems.*

**DIANA VICTORIA GIDU**

Faculty of Physical Education and Sports, Ovidius University of Constanta

**INFLUENCE OF PROPRIOCEPTIVE TRAINING ON THE STRENGTH OF THE LOWER LIMB IN WOMEN SOCCER PLAYERS**

**Abstract:** *The proprioceptive training has an important role in developing and maintaining the force of the lower limbs. The proprioceptive training rapidly gained attention in the sport performance for both the prevention and recovery of muscular injuries and increasing physical performance.*

*Purpose:* *The aim of this study was to prove that a 15 minutes of proprioceptive training performed at the beginning of the training sessions has a good influence on force of the lower limb in women soccer players.*

*Material and methods:* *Participants were 18 active women soccer players, age 20.75 ± 4.59 years old. The task of the experimental group consisted to performed a 15 minutes of proprioceptive exercises, special designed for soccer game, at the beginning of the training sessions, two times a week. For the measurement of the forces of the lower limbs we used Hop test. Conclusions: The experimental group has recorded better results than the control ones, on the Hop test (p < 0,005).*

**Keywords:** *proprioceptive exercises, women soccer players, increase force, lower limbs.*

**K. TURGUT GÜRSEL, DENİZ ÜNSALAN, GÖKDENİZ NEŞER, MESUT TANER, ERKIN ALTUN SARAY, MEHMET ÖNAL**

Institute of Marine Sciences and Technology, Department of Naval Architect, Dokuz Eylül University, Inciraltı – 35340 Izmir, Turkey

**A TECHNOLOGICAL ASSESSMENT OF THE WAVE ENERGY CONVERTER**

**Abstract:** *Global demand for energy increases annually, at the same time as the demand for carbon-free, sulphur-free and NO<sub>x</sub>-free energy resources grows considerably. This is manifested in the research for newer sources like biomass and shale gas as well as the renewable energy resources like solar, wind, geothermal and hydraulic energy.*

*Wave energy is also a form of renewable energy which has not fully been exploited technically and economically. However, it is beyond doubt that the demand for wave energy will soon increase as fossil energy resources are depleted and environmental concerns gain more importance.*

*The electrical energy to be supplied to the grid shall be produced from the wave energy whose conversion can basically be carried out by three classes of systems:*

- i. Systems that exploit the motions or shape deformations of their mechanisms involved, being driven by the energy of waves passing.*
- ii. Systems that exploit the weight of the seawater stored in a reservoir or the changes of water pressure by the oscillations of wave height,*
- iii. Systems that convert the wave motions into air flow.*

*This study is aimed for a general survey of the systems and classification of the wave energy converters based on their types and functionality, as well as investigating their state-of-the-art.*

**Keywords:** *Wave energy, wave converter, type of converter, assessment of converter.*

**ELENA HANU, SILVIA TEODORESCU, CARMEN ENE-VOICULESCU**

National College Mihai Eminescu Constanta // UNEFS Bucharest // Ovidius University, Faculty of Physical Education and Sport, Constanta

**ETHICS AND PROFESSIONALISM IN SPORTS MANAGEMENT ACTIVITIES**

**Abstract:** *Defining the elements pertaining to the scale and diversity of sports activities, the specificity and complexity of the Organization, management, and evaluation of the results.*

**Keywords:** *Ethics, professionalism, performance, management, sport activities.*

**ELENA HANU, SILVIA TEODORESCU, CARMEN ENE-VOICULESCU**

National College Mihai Eminescu Constanta // UNEFS Bucharest // Ovidius University, Faculty of Physical Education and Sport, Constanta

**OPTIMIZATION OF SELECTION CRITERIA AND OF THE MEANS OF GUIDANCE OF SWIMMING ATHLETES**

**Abstract:** *This paper aims to summarize some aspects that define the specificity of sports activity in the swimming discipline in terms of the rules and criteria governing the sports selection for performance swimming. The perfection of training the athlete is highly influenced by technicians who must assume with responsibility this "holy" mission of modeling and development of the athlete in the context of high performance sport industrialization. Selection in sport is a complex, directed, which aims to highlight those young kids with high potential, and under the influence of methodological and scientific training, lead to great performance. This complex system meets all the criteria, selection rules in the concept of "selection model" / "constitutional biotype" characterized by certain physical, motor and behavior qualities specific to each branch of sport. As a key factor in obtaining sports performance, the selection process has a continuous character and depends on the interface of several factors: social, economic, cultural, biological, methodical, technical.*

**Keywords:** *selection, sports, performance, criteria.*

**GRETA KOLEVA, IRINKA HRISTOVA, DESPINA GEORGIEVA, DANIELA DRAGANOVA, IVANICHKA SERBEZOVA**

University of Ruse, Pedagogy Department

**LEVEL OF AWARENESS OF REPUBLIC BULGARIA'S POPULATION FOR TREATMENT OF ISCHEMIC STROKE VIA THROMBOLYSIS**

**Abstract:** *The stroke is a socially significant disease that is characterized with high levels of morbidity and mortality, causing severe disability worldwide. It is the second most significant cause of death among the people in the western world, falling back only to the heart diseases and preceding the cancer, as it causes 10% of the mortal cases in the world. Since 2009 the Bulgarian association of neurosonology and cerebral hemodynamics(BANCH) organizes different initiatives of training doctors to conduct a thrombolytic treatment to acute ischemic stroke(AIS). The intravenous thrombolysis has not been established as a leading differential treatment of AIS in Bulgaria, and the thrombolytic therapy is still not well developed in Bulgaria. The support of national and local institutions is crucial for insuring and guarantee for a proper stroke treatment. Efforts are necessary for adequate financing of the health facilities, as well as professional preparation of the human resource, and training the population via creating an integrated national strategy for its application and control, which can underlie as a state politics in healthcare at optimal usage of public-private partnership.*

**Keywords:** *ischemic stroke, thrombolysis, Actilyse®, stroke unit*

**DAN LASCU, GABRIELA ILEANA SEBE**

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Faculty of Applied Sciences, Politehnica University of Bucharest, Bucharest, Romania and Institute of Mathematical Statistics and Applied Mathematics, Bucharest, Romania

**NEW PERSPECTIVES IN THE METRIC THEORY OF CONTINUED FRACTION EXPANSION RELATED TO FIBONACCI TYPE SEQUENCES**

**Abstract:** *A survey of the metric theory of the continued fraction expansions related to random Fibonacci Type sequences discussed by Sebe and Lascu is given. The limit properties of these expansions have been studied. A Wirsing-type approach to the Perron-Frobenius operator of the generalized Gauss map under its invariant measure allows us to get close to the optimal convergence rate. Actually, we obtain upper and lower bounds of the convergence rate which provide a near-optimal solution to the Gauss-Kuzmin-Lévy problem for these expansions.*

**Keywords:** *continued fractions, random Fibonacci-type sequences, Perron-Frobenius operator, random system with complete connections, Gauss-Kuzmin-Lévy problem*

**VASILE DINU, CRISTINA-MIHAELA LAZAR, IONEL BOSTAN, COSTICĂ ROMAN, PUIU NISTOREANU, ION-STELIAN CHIHAI**

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**PROVIDING FINANCIAL SUPPORT FOR THE NATIONAL DEFENSE SYSTEM IN THE CURRENT GEOPOLITICAL CONTEXT**

**Abstract:** *This paper highlights the most important aspects, seen mainly from an economic and financial perspective, of the correlation between the needs of the national defense system with the possibilities conferred by the development stage of our country, considering that Romania is a NATO member, with certain commitments in this regard. Obviously, based on the recent Political Agreement on increasing national defense funding, we consider that the support for military expenditure should be much stronger, given the risks of the current regional geopolitical space, generating instability and insecurity. Thus, after a period when the Romanian Army funding parameters were relatively modest, we highlight that the allocations in question are going to be based on a distribution of approx. 2% of the GDP (period 2017-2027), a vital issue in ensuring the support and development of procurement programs - with equipment and combat technology - and military staff training. The study of the literature has strengthened our belief, expressed herein, that the respective percentage may be increased, depending on the security needs and obligations that Romania can assume, targeting – ultimately – a greater increase in the operational capability of the Army.*

**Keywords:** *public spending, military logistics/ procurement, remuneration/ pay, missions / operations.*

**DELIA LUNGU, LAURA CIZER**

"Mircea cel Batran" Naval Academy, Constanta, Romania

### **FOCUS ON THE USE OF A MARITIME ENGLISH VISUAL DICTIONARY IN ESP CLASSES**

**Abstract:** *Whether in paper or online formats, dictionaries are more than just collections of words, and used properly, they could lead towards the development of learners' autonomy. Once students are taught how to use them effectively, there are hundreds of hours of self-guided study. Dictionaries can constitute an ideal way of enriching students' vocabulary due to the fact that they generate an extremely varied collection of communicative activities, ranging from basic dictionary use to vocabulary and reading skills.*

*This paper aims to put forward 10 dictionary activities tapping an in-house material (the Online Maritime English Visual Dictionary) as an effective means of boosting students' specialist vocabulary.*

**Keywords:** *online dictionary, Maritime English, language skills, materials development*

**ISABELA MERILA**

English Department, Faculty of Letters, "Dunarea de Jos" University of Galati

### **THE SEA IN OLD ENGLISH LITERATURE**

**Abstract:** *The sea has been a constant presence in English literature: from Shakespeare to Coleridge and to Conrad, authors have included representations of this complex body of water in a variety of works covering the majority of genres. This should not come as a surprise to any reader, considering England's geographical position and the way this influenced its history and its cultural makeup in general. Following the tradition of archetypal criticism, we chose to trace the representations of the sea back to their origins and focus on the earliest remaining texts from Old English Literature in search of prevalent symbolic values, as well as their connection to Anglo-Saxon ethos.*

**Keywords:** *sea, archetype, Old English*

**MARIUS IULIAN MIHAILESCU, STEFANIA LOREDANA NITA, MARIAN DORIN PIRLOAGA**

Department of IT&C, LUMINA – The University of South-East Europe // Department of Integrated Systems, Institute of Computers // Military Technical Academy

### **SOFTWARE SECURITY TECHNIQUES: RISKS AND CHALLENGES**

**Abstract:** *Because of the increasing number of applications that are working on-line, software security has become an important aspect for software development process. The paper will present the main mechanisms and features on which we have to stop when we are designing and implementing a software application, such as sensitive information, execution of the program, and different ways of analyzing static and dynamic code. We will explain two attacks techniques (analysis and tampering) that could occur on the program and we will demonstrate how we can exploit some vulnerable points of access in the software application. Based on the two types of attacks we will discuss about obfuscation techniques and perturbed functions as a new approach to obfuscation and diversity.*

**Keywords:** *software security, obfuscation, perturbed functions, client-server, attacks*

**STEFANIA LOREDANA NITA, LAURENTIU DUMITRU, ADRIAN BETERINGHE**

Integrated Systems Department, Institute for Computers // Military Technical Academy // Department of IT&C, LUMINA – The University of South East Europe

### **MACHINE LEARNING TECHNIQUES USED IN BIG DATA**

**Abstract:** *The classical tools used in data analysis are not enough in order to benefit of all advantages of big data. The amount of information is too large for a complete investigation, and the possible connections and relations between data could be missed, because it is difficult or even impossible to verify all assumption over the information. Machine learning is a great solution in order to find concealed correlations or relationships between data, because it runs at scale machine and works very well with large data sets. The more data we have, the more the machine learning algorithm is useful, because it "learns" from the existing data and applies the found rules on new entries. In this paper, we present some machine learning algorithms and techniques used in big data.*

**Keywords:** *Big Data, machine learning, supervised learning, unsupervised learning.*

**VIOLETA N. OPRIS, SERGIU EFTIMIE, CIPRIAN RACUCIU**

Military Technical Academy, Faculty of Military Electronic and Information Systems, Bucharest // Titu Maiorescu University, Computer Science Department, Bucharest

### **BIOMETRIC MULTI-FACTOR AUTHENTICATION SCHEME IN CLOUD COMPUTING**

**Abstract:** *The biometric Multi-Factor authentication represents the next generation computing authentication infrastructure. This paper proposes a novel multi-factor authentication scheme based on biometrics concepts. Biometrics is a process used to identify or authenticate an individual's identity using any of a series*

of physical or behavior characteristics. Interconnecting biometric technologies with cloud infrastructure improves speed, secure communication, scalability, identity and access management, reliability, automation.

**Keywords:** biometric, Cloud computing, security, authentication methods, authorized user

#### **CLAUDIU PIRNAU, MIHAI ALEXANDRU BOTEZATU, IULIU STEFAN GRIGORESCU**

The University of South East Europe Lumina, Faculty of Information Technology // Romanian - American University, Faculty of Computer Science for Business Management // Academy of Economic Studies, Faculty of Accounting and Management Information Systems

#### **DATABASES ROLE CORRELATED WITH KNOWLEDGE TRANSFER BETWEEN ENTITIES OF A CLUSTER**

**Abstract:** Knowledge transfer between organizations members of a regional cluster is influenced both by the complexity of the tasks, and the experience of user groups. The integration of knowledge (tacit, explicit and potential) in current activities of a trader involves the creation of an efficient use of specific databases. The issue of knowledge transfer can be analyzed from four perspectives: using cloud technologies (development of platforms for cloud applications is an important strategy, especially in activities within a geographically dispersed network); empowerment (granting freedom of each employee to contribute in the decision making process, in the power distribution according to his competence and in accordance with the objectives and culture of that organization); development and implementation of more efficient knowledge sharing procedures; analysis of the interdependence between quality and quantity of knowledge, its source and destination, such as modelling and simulation techniques, public administration management, knowledge management and that of management cooperation in strategic cluster alliances. The issue of knowledge sharing will be developed by means of a system based on an original interpretation of methods After Action Review and respectively SMART (Specific, Measurable, Assignable, Realistic, Time-related).

**Keywords:** cloud, databases, information, interdependence, knowledge transfer.

#### **FLORIN POSTOLACHE**

"Mircea cel Batran" Naval Academy, Constanta, Romania

#### **ONTOLOGY TOOL FOR KNOWLEDGE ACQUISITION IN A VIRTUALISED ICT INFRASTRUCTURE**

**Abstract:** Nowadays, physical (hardware) environments virtualization has expanded rapidly, becoming an absolute necessity for IT infrastructure reconfiguration. The system virtualization and cloud computing are highly debated topics in the last 10 years which lead towards numerous strategies, sometimes quite different. IT Virtualization increases the levels of resources utilization. Due to load balancing of the available physical resources, by virtualization we increase their level of usage, without a proportional growth of costs, as in a normal extension of infrastructure. The research necessity is imposed by the rapid evolution of the information technology, which leads to finding new ways of organizing the hardware infrastructure, applications, as well as new ways of solving the operations, regardless their complexity. A big part of the infrastructure can become partially or totally virtualized and thus, the processes gain a dynamic and distributed character, while the static and hierarchical structures become more and more adaptable and flexible. Thus, for knowledge acquisition and structuring, we consider necessary the development of a peculiar ontology involving a common set of constraints and a conceptual environment, having as a main goal the relations between the information classes and modeling of knowledge. Having established the goal, i.e. defining an ontology of the IT infrastructure virtualization field, we will suggest a methodology necessary to classifying the virtualized systems, offering to the specialists' community a new model structured through the medium of the included layers, which allows capturing the relations between entities / services included in a layer, as well as the relations between the components of different layers. The virtualized IT environment, structured according to the proposed approach also allows us to deepen knowledge and understand the virtualization domain, its components and their relationships.

**Keywords:** Ontology, virtualised IT infrastructure, knowledge acquisition

#### **NINELA RADULESCU, CECILIA ADUMITRESI, CRISTINA FARCAS, ILEANA ION, EUGEN RADULESCU**

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#### **OCCUPATIONAL NOISE EXPOSURE – RISK FACTOR FOR SEAFERARS**

**Abstract:** Introduction: Professional exposure to noise higher than 85 dB can lead to hearing diseases (hypoacusia, professional deafness through sound trauma) but, in the same time, also to diseases related to profession (high blood pressure, digestive diseases, neuroses). The measured values of sound intensity within vessel compartments (engine room, main deck) are different with a higher level in the engine compartment (LEX, 8h = 85 dB(A)) Material and method: The survey concerns a batch of 90 navigators (deck and engine crew), selected according to the level of exposure to noise and length of service on the basis of an anamnestic questionnaire that applies to the persons exposed to noise and vibration.



**Keywords:** noise, seafarers, occupational noise, limit exposure level (LEX, 8h), hearing impairment

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**WATERMARKING PROTECTION FOR 3D IMAGES**

**Abstract:** *The 3D digital contents are increasing rapidly on the media market and games market but the techniques of copyright protection are still on the low level. The existing watermarking 3D models focused on the robustness against possible attacks to destroy the embedded watermarks, are using to hide copyright information. But a clear auto-protection able to embed a visible 3D watermarks into the original 3D image, but also capable to remove the watermark without 3D host image damage, is not yet presented in the specific scientific literature. Our proposed algorithm overlaps a removable watermark image over the 3D host, original image. It could be removed based on several parameters encrypted in a hide watermark. A 3D watermark is hiding, using surface curvatures, by segmentation of the regions over the given 3D triangular mesh. The watermark is embedded to the areas by statistically modulating the distance between each mesh vertex and the mass center of the mesh. The presented algorithm embeds a visible watermark in a 3D host image together with a hide encrypted message on the sender side and then, on the receiver side, extracts the parameters and decrypts them, in order to remove the visual watermark.*

**Keywords:** 3D images, visual watermark protection, copyright protection, hide watermark

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**LE CINEMA HITCHCOCKIEN – APPROCHE GÉNÉRALE**

**Abstract:** *Il est impossible de surestimer l'influence d'Alfred Hitchcock sur l'histoire du cinéma. Très populaire à la fois pour le public et parmi les critiques, sa carrière prolifique s'est étendue sur cinq décennies et a produit des dizaines de films, dont de nombreux qui sont considérés comme des classiques inestimables. Sans doute un des plus habiles réalisateurs du XXème siècle, Hitchcock a été reconnu comme le maître du suspense cinématographique, un créateur qui a exercé un «contrôle presque pavlovien» sur les émotions et les réactions de son public. Ces émotions et le plaisir qui en découle sont acquis par le biais des techniques cinématographiques et des procédures subliminales qu' Hitchcock contrôlait si bien. Il pourrait vraiment captiver le public; c'est ainsi que sa capacité de manipuler les émotions des spectateurs est devenue légendaire.*

*Dans cet article on va aborder la conception artistique d'Hitchcock vis-à-vis l'art cinématographique comme véhicule du plaisir résultant de l'émotion, du suspense, et, de manière explicite, de la structure du montage, en s'appuyant, tout d'abord, sur ses interviews et ses déclarations et secondairement sur la critique qui lui a été dédiée.*

**Mots-clé :** Alfred Hitchcock, cinéma, suspense, technique cinématographique;

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**CONSIDERATIONS ON PARTICULAR ASPECTS OF ENGINEERING LANGUAGE**

**Abstract:** *Beside the usual communication tools of engineering professionals, i.e. formulae, charts, drawings and the like, language is by far the greatest (sic!) means of conveying professional messages and ideas. Projects, memos and contracts depend not only on their contents as to the reactions and further development they trigger, but also on the linguistic manner in which they are brought forward. Clear and unequivocal phrasing and language are of utmost importance in contracts where any misunderstanding may lead to costly consequences and even more so in building specifications, operating and repair instructions! Engineers are usually less interested in linguistic issues. Nevertheless, they are the exponents of the paradox that they express themselves more clearly and accurately than humanities professionals. The engineering jargon is not made up entirely of symbols, formulae and equations. In order to reach the public sphere, one has to use everyday terms and concepts. Engineering terminology is characterized by specialized terms, certain forms of sentence structures and accuracy of expression. Texts are well structured and have a mainly descriptive nature. From the way texts are conceived and from terms and phrases used in texts at a particular time, one can draw conclusions about the prevailing conditions of the time and about the state of technology at that moment. Consequently, language is in every respect an eclectic phenomenon.*

**Keywords:** language, engineering terminology, specialized vocabulary, communication

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**ON SOME LINEAR AND POSITIVE OPERATORS ON SLOT**

**Abstract:** *The aim of this note is to discuss about the behavior and the properties of some linear and positive operators on SLOT*

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**INTERCONNECTING NETWORKS WITH DIFFERENT LEVELS OF SECURITY – A PRESENT NATO PROBLEM**

**Abstract:** *A situation often met in the Romanian Armed Forces in recent years is the need for interconnecting two networks (domains) with different levels of classification. Considering that the Romanian armed troops are involved in numerous missions with NATO partners, solutions, already implemented across the organization, are considered to be applied in domestic systems, also. This paper presents the solutions adopted by NATO in order to solve the problem of cross-domains interconnections. We present the maturity level reached by these solutions and the possibility of implementing these solutions in the Romanian Armed Forces, with or without specific adaptation to our own rules and regulations. The goal is to use a NATO already proved solution to our national classified networks.*

**Keywords:** *Informatics, Networks, Interconnection, Communications*